Who's There? Web and Mobile Applications Test

Team Who's There?

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Introduction

Who's There is a website displaying occupancy data of classrooms in University College Dublin estimated on Wifi logs. The website is aimed at UCD staff planning module timetables and enables them to improve classroom allocation. It also allows UCD students to find empty classrooms on campus. An Android application is also part of the product and permits the collection of ground truth occupancy data.

A usability test is intended to determine the extent an interface facilitates a user's ability to complete routine tasks. Typically the test is conducted with a group of potential users either in a usability lab, remotely (using e-meeting software and telephone connection), or on-site with portable equipment. Users are asked to complete a series of routine tasks. Sessions are recorded and analyzed to identify potential areas for improvement to the web site.

Team Who's there conducted the usability test using a live version of the website and Android application. A laptop using Camtasia recorded the on-screen activity and the participants' comments. Two mobile devices were used to test the Android application: one on which the participants tested the application and the other recording the participants' actions and comments. The test administrator and data logger were present in the testing room. The session captured each participant's navigational choices, task completion rates, comments, overall satisfaction ratings, questions and feedback.

Executive Summary

Who's There team conducted the usability test in the Science Building in University College Dublin on 17th August 2016. The purpose of the test was to assess the usability of the web and mobile applications' interface designs and information flow. Three UCD students participated in the test. Each individual session lasted approximately 20 minutes. The same two test scenarios were given to the participants.
In general, the participants found the Android application straightforward, but parts of the website lacked user-friendliness.

The test identified a few issues including:

- The slide bar under the building floor map used to select a time slot
- Confusion about the graphs which appear to be clickable but are inactive
- Confusion about the use of colours on graphs and floor map used to indicate levels of occupancy

This document contains the participant feedback, satisfaction ratings, task completion rates, time on task, errors and recommendations for improvements. A copy of the scenarios and questionnaires are included in the Attachments section.

Methodology

Sessions

Each individual session lasted approximately 20 minutes. During the session, the test administrator explained the test session and asked the participants to sign consent forms to allow the recordings. Participants read the task scenario for the website and tried to find the information on the website. After the tasks were completed, the test administrator asked the participants to fill an online survey to rate the efficiency, control, learnability, helpfulness of the website and their emotional response to using the website.
The participants then read the task scenario for the mobile application and tried to submit occupancy data using the Android application. After they had completed the task, they were asked to complete a survey similar to the first one.
While completing the tasks on the web and mobile applications, the users were encouraged to talk and comment their actions. After each test, they were ask to give an oral feedback of the user interface.

Participants

All participants were current UCD students. They were scheduled over the evening of August 17th. Of the three participants, two were females and one was male.

Evaluation Tasks/Scenarios

Test participants attempted completion of the following tasks (see Attachments for complete test scenarios):

1. Tasks on the website
   - Register on the website
   - Log in
   - Find an empty room at a specified date and time in a specific building

2. Tasks on the mobile application
   - Submit an occupancy number for a specific room in a specific building at a certain time on a certain date

Results

Task Completion Success Rate

All participants successfully completed all tasks in both scenarios.

Task Completion Rates

	Website			Mobile
Participant	**Task 1**	**Task 2**	**Task 3**	**Task 4**
1	√	√	√	√
2	√	√	√	√
3	√	√	√	√
Success	**3**	**3**	**3**	**3**
Completion Rates	**100%**	**100%**	**100%**	**100%**

Task Ratings

After the completion of each sets of tasks, participants rated their experience using the user interface. A summary of the responses is made below.

1. Website Ratings

   When asked if the user was taken into account when the website was designed, 1 participant agreed, 1 disagreed and 1 was undecided. One third of the participants thought that learning to use new features was difficult, the other 2 thirds disagreed. Two users believed that not too many steps are required to find information, while one was undecided. user thought it was difficult to get the website to do what they wanted, another one thought it was easy and the last one was undecided. 100% of users agreed it was easy to move from one task to another. One user said they needed assistance most of the time to complete the tasks, another said they did not and the last one was undecided. Two thirds of the users thought that tasks could be performed in a straightforward manner, while one third was undecided. Two thirds of the users admitted feeling frustrated while using the website, agreed that the website did not always behave in an expected way that it should display more information explaining how to use it.
   All users agreed that the website responded quickly to input. And 100% of participants would recommend the website to other people but were undecided on whether they would want to use it every day.
   Comments mentioned that the colours were misleading and that there were too many graphs.

2. Mobile Application Ratings

   All users found that learning to use new features on the application was easy, and none of them thought that too many steps were required to complete any of the tasks. None of them required assistance to complete the tasks or felt frustrated while using the application. None of them thought that the more information was needed to guide the user. All of the users agreed that the application responded quickly to input. Two thirds of participants said they would use the application every day, while 1 participant was undecided. All of them would recommend the application to other students.
   One comment mentioned they did not realise the they could use the soft keyboard to input the occupancy number.

Time on Task

The testing software recorded the time on task for each participant. Some tasks were inherently more difficult to complete than others and is reflected by the average time on task.

Task 3 required the participants to find an empty classroom at a given time and date in the Computer Science building and took the longest time to complete (mean = 170 seconds).

Time on Task (in seconds)

		P1	P2	P3	Avg. TOT*
Website	**Task 1**	34	26	24	28
	Task 2	9	11	12	10.7
	Task 3	213	136	162	170.3
Mobile	**Task 4**	31	21	28	26.7

Errors

A non-critical error is an error that does not prevent successful completion of the scenario. The task in which participants made the most errors was task 3. Participant 1 made 11 errors, participant 2 made 6 errors and the last participant made 4 errors. All other tasks were executed with no errors.

Summary of Data

The table below displays a summary of the test data. Low completion rates and satisfaction ratings and high errors and time on tasks are highlighted in red.

For example:

Summary of Completion, Mean Errors, Time on Task, Mean Satisfaction

Task	Task Completion	Errors	Time on Task
1	3	0	28
2	3	0	10.7
3	3	7	170.3
4	3	0	26.7

Recommendations

The recommendations section provides recommended changes and justifications driven by the participant success rate, behaviors, and comments. Each recommendation includes a severity rating. The following recommendations will improve the overall ease of use and address the areas where participants experienced problems or found the interface/information architecture unclear.

Website

Find an empty classroom at a given time and date in the Computer Science building (Task 3)

Change	Justification	Severity

• Add time labels to slide graph • Make slide bar smoother • Make the legend with the time of day clearer • Make the graphs static • Make the graphs appear only when a classroom is selected	All participants found it difficult to use the slide bar. They did not understand how to move the slider and what value it changed. Some of the participants commented that they did not understand the time legend. All the participants thought the graphs were interactive and tried to click on them in order to display extra information	High

Android application

Submit the number of occupants in a specific classroom on a given date and time (Task 4)

Change	Justification	Severity
• Make it clear that the occupant number field can be modified using the soft keyboard	Two thirds of the participants did no realise they could use the keyboard and used the plus button set the value	High

Conclusion

All participants found the Who's There? web and mobile applications pleasant to use, however certain features need to be modify in order to improve usability of both applications. Implementing the recommendations and continuing to work with users (i.e., real lay persons) will ensure a continued user-centered website.

Attachments

A. Task Scenario for the website

TASK SCENARIO FOR WEB APP

Imagine that you are a Computer Science student and it is 10AM on the 13th of November 2015. It is cold and you need to find a room to study during the next hour before your exam. You heard about our Who's There website and you want to try it. It is the first time that you are using our website and you need to register first. "TEST" is the code that allows you to register. Once that is done, look for a classroom with low occupancy that you can use.

B. Task Scenario for the mobile application

TASK SCENARIO FOR MOBILE APP

Imagine that you were chosen to carry out a survey for estimating classroom occupancy in UCD and you were using our mobile application. It is the 17/8/2016 (today) and it is 10AM. You are in room B002 in the Computer Science and Informatics Building and you estimate that there are 50 people in the room. "Test" is the access code that authorises you to submit the data to the server. Use the mobile application to submit your estimate.